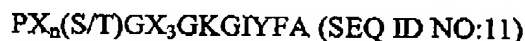


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AMENDMENTS TO THE CLAIMS

1. (currently amended) An isolated and purified poly(ADP-ribose) polymerase (PARP) homolog ~~comprising consisting of~~ human PARP2 (SEQ ID NO: 2) ~~and or a functional equivalents equivalent~~ thereof which are is at least 85% homologous thereto, exhibits poly(ADP-ribose)-synthesizing activity, and ~~have~~ has an amino acid sequence which

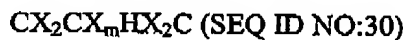
a) has a functional NAD^+ binding domain comprising the sequence motif



in which n is an integral value from 1 to 5, and the X radicals are, independently of one another, any amino acid;

and

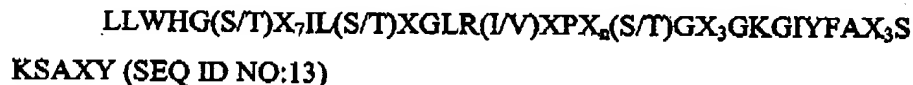
b) lacks a zinc finger sequence motif of the general formula



in which

m is an integral value of 28 or 30, and the X radicals are, independently of one another, any amino acid.

2. (currently amended) ~~A functional equivalent of a~~ The PARP homolog as claimed in claim 1, wherein the functional NAD^+ binding domain comprises one of the following general sequence motifs:



in which

n is an integral value from 1 to 5, and the X radicals are, independently of one another, any amino acid.

3. (currently amended) ~~A functional equivalent of a~~ The PARP homolog as claimed in

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claim 1, comprising at least another one of the following part-sequence motifs:

LX₉NX₂YX₂QLLX(D/E)X_{10/11}WGRVG (SEQ ID NO: 15),

AX₃FXXKX₄KTXNXWX₅FX₃PXX (SEQ ID NO:16),

QXL(I/L)X₂IX₉MX₁₀PLGKLX₃QIX₆L (SEQ ID NO:17),

FYTXIPHXFGX₃PP (SEQ ID NO:18); and

KX₃LX₂LXDIEXAX₂L (SEQ ID NO:19),

in which the X radicals are, independently of one another, any amino acid.

4-32 (canceled)